NF-AG NEWS & VIEWS

Soils: November, 2002

Stand Establishment, Soil Fertility, Pest Management Key to Productive Alfalfa

Phosphorus (P) soil test methods do not test for total P content in soils because the amount that is plant available is much less than the total, and a good correlation between the two is not consistently observed. Also, water-soluble P tests are not used to determine crop responses because the amount of water-soluble P in soils is very small and, likewise, not usually related to the amount that is plant available. Current testing methods extract certain fractions of soil P thought to be plant available. That value is then matched with field-tested rate-response studies to estimate the likelihood of response to added P fertilizer.

Since 1994, the Noble Foundation has sent all analytical samples to Ward Laboratories in Kearney, Neb. They have traditionally used methods called Bray/Kurtz P1 or Mehlich 2 to test for soil P, depending on soil pH and the presence of free carbonates in the solution. Most of our samples (those without free carbonates) are tested using the Bray/Kurtz P1 method, and it is accurate under most conditions encountered in the Foundation's service area.

Currently, regulations for nutrient management plans require the Mehlich III (pronounced "May-lick 3") extractant. It extracts similar amounts of P from soils but, unlike the Bray method, allows other nutrients to be tested with the same extractant solution. Because the Mehlich method is as good or better than Bray/Kurtz P1 and because it has become the standard for Oklahoma and other neighboring states, the Noble Foundation has elected to change our P extractant method to Mehlich III on all samples we receive.

To our cooperators, this will mean slight changes in the raw sample numbers coming back from the lab, but no change in the fertilizer rate recommendations we make.

For example, if a soil test P index was 20 with the old method, it would be 24 with the new method. Similar small differences will occur throughout the range. **Remember: because we are estimating plant-available P, the relative available amount is more important than the actual lab number.** The fertilizer recommendation for the above site would still be 40 pounds of P_2O_5 per acre for winter wheat.

As always, plan ahead and take samples early enough to allow eight to 10 days for preparation and analysis.

The new method will be used on samples received after Nov. 1. We anticipate only positive results from the change. A reprint of this article will be included with each soil test report issued until the end of the year. If you have questions about any of this, please contact your soil fertility specialist for further discussion.

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